

THE INVENTION CLAIMED IS

1. A lath for use with a frame member for a structural panel comprising:
 - a) a generally planar sheet having a front side and a back side,
 - b) a plurality of ribs formed within the sheet
 - i) wherein the ribs protrude from the back side of the sheet,
 - ii) wherein each rib has a profile with a first side and a second side which diverge from one another as they extend away from the back side and then converge, and
 - iii) wherein the maximum height of a rib occurs at the place of maximum divergence, and
 - c) a plurality of slats extending through the sheet for adapting the sheet to receive and retain thereupon a structural coating.
2. The lath in accordance with claim 1, wherein the sheet is constructed from a thin pliable material such that the ribs are resilient and the ribs may be compressed to reduce the maximum height.
3. The lath in accordance with claim 1, wherein the sheet is made from a material selected from the group consisting of metal, plastic and carbon fiber composites.
4. The lath in accordance with claim 1, wherein the sheet has a plurality of segments with slats therein wherein the slats within adjacent segments are oriented differently to securely engage any structural coating that may be applied to the sheet.
5. The lath in accordance with claim 4, wherein the slats within a segment are parallel to one another.
6. The lath in accordance with claim 5, wherein the sheet has a longitudinal axis, each slat is along a line to define a slat vertical angle with the longitudinal axis, and wherein the slat vertical angle formed by the slats in one segment are equal and opposite to the slat vertical angle formed by the slats in an adjacent segment.

7. The lath in accordance with claim 1, wherein, when viewed in section, each segment of slats forms a slat planar angle with the longitudinal axis and wherein the planar slat angle of the slats in one segment is equal to and opposite the slat planar angle formed by the slats in an adjacent segment.

8. The lath in accordance with claim 1, wherein a plurality of divots are formed within the front side of the sheet to provide protrusions from the back side of the sheet, such that the sheet may be spaced from any flat surface upon which it may be applied.

9. The lath in accordance with claim 1, wherein each rib has a plurality of holes extending therethrough to provide pressure relief to any structural coating that may be applied to the sheet.

10. A lath for use with a frame member for a structural panel comprising:
a) a generally planar sheet having a front side and a back side,
b) a plurality of ribs formed within the sheet
i) wherein the ribs protrude from the back side of the sheet,
ii) wherein each rib has a profile adapted to snap into an opening of the frame member, and
iii) wherein the maximum height of a rib occurs at the place of maximum divergence, and
c) a plurality of slats extending through the sheet for adapting the sheet to receive and retain thereupon a structural coating.

11. A lath for use with a frame member for a structural panel comprising:
a) a generally planar sheet having a front side and a back side,
b) a plurality of ribs formed within the sheet
i) wherein the ribs protrude from the back side of the sheet,
ii) wherein each rib has a profile in the shape of a barb adapted to snap into an opening of the frame member, and
iii) wherein the maximum height of a rib occurs at the place of maximum divergence, and
c) a plurality of slats extending through the sheet for adapting the sheet to receive and retain thereupon a structural coating.

12. A structural panel comprising:

a) at least one frame member having a longitudinal axis and a plurality of receptor pockets extending within the frame member in a direction generally perpendicular to the longitudinal axis; and

b) a lath connected to the at least one frame member, wherein the lath has a plurality of resilient ribs extending therefrom and wherein the ribs resiliently engage corresponding receptor pockets within the at least one frame member to secure the lath to the at least one frame member.

13. The structural panel in accordance to claim 12, wherein the receptor pockets extend from a first side of each frame member and the lath is secured to this first side.

14. The structural panel in accordance with claim 12, where the receptor pockets extend from both the first side and an opposing second side of each frame member and further including a second lath wherein a lath is secured to each the first side and the second side of the frame member.

15. The structural panel according to claim 12, wherein the lath further comprises:

a) a generally planar sheet having a front side and a back side,
b) wherein the ribs are formed within the sheet and protrude from the back side of the sheet,

c) wherein each rib has a profile with a first side and a second side which diverge from one another as they extend away from the back side and then converge,

d) wherein the maximum height of a rib occurs at the place of maximum divergence, and

e) a plurality of slats extending through the sheet for adapting the sheet to receive and retain thereupon a structural coating.

16. The structural panel according to claim 12, further including a mesh between the lath and the frame to provide a backdrop for any structural coating that may be applied to the structural panel.

17. The structural panel according to claim 16, wherein the mesh is made from one of the group consisting of fiberglass and carbon fiber composites.

18. The structural panel according to claim 12, further including a thermal break between the lath and the frame to provide a thermal barrier that will disrupt any conductive heat flow from the lath to the frame.

19. The structural panel according to claim 18, wherein the thermal break is comprised of a liquid gasket applied over the lath.

20. The structural panel according to claim 18, wherein the thermal break is comprised of a one piece gasket secured to the frame member with adhesive.

21. The structural panel according to claim 12, further including reinforcement bars positioned within the ribs of the lath to lock the lath within the frame member and to provide additional structural stiffness to the structural panel.

22. The structural panel according to claim 12, further including a structural coating applied on the front side of the lath and permeating through the slats and the receptor pockets to further secure the lath to the frame member.

23. The structural panel according to claim 22, wherein the structural coating is stucco.

24. The structural panel according to claim 22, wherein the structural coating is plaster.

25. The structural panel according to claim 12, wherein the lath is metal and the frame is light gauge steel.

26. The structural panel according to claim 12, wherein each receptor pocket extends continuously across the frame member.

27. The structural panel according to claim 12, wherein the receptor pockets are apertures extending through one or both of the first side and the second side of the frame member.

28. The structural panel according to claim 12, wherein each rib extends across the lath in an interrupted pattern.

29. The structural panel according to claim 12, wherein the panel may be used for at least one structural member from the group consisting of roofs, floors, ceilings, foundations, basement walls, verandahs, decks, fences and interior and exterior walls.

30. A method of making a structural panel utilizing at least one frame member having a longitudinal axis and a plurality of receptor pockets extending within the frame member in a direction generally perpendicular to the longitudinal axis and a lath having a plurality of resilient ribs extending therefrom and adapted to resiliently engage corresponding receptor pockets within the at least one frame member, wherein the method comprises the steps of:

- a) aligning the ribs of the lath with matching receptor pockets in each of the frame members; and
- b) urging each rib within the matching receptor pocket of the frame member until each rib snaps into position.

31. The method according to claim 30, further comprising the step of coating the lath with a structural coating.

32. The method according to claim 30, further comprising, after the step of urging each rib within the receptor pocket of the frame member, the step of inserting reinforcement bars within the ribs to lock the rib within the receptor pocket.

33. The method according to claim 32, further comprising the step of coating the lath with a structural coating.